Science Fair - By: Kash Farney  
  
**Problem**  
What stain fighter works best?  
  
**Introduction**  
I chose this project because I wondered if using a stain removing pen like tide-to-go would work better on stains then the traditional way of spraying and then washing when the stain has set.  
**Background Information**  
Most stains are removed by dissolving them with a solvent. The solvent to use depends from two factors: the agent that is causing the stain, and the material that has been stained. Different solvents will dissolve different stains, and the application of some solvents is limited by the fact that they not only dissolve the stain, but also dissolve the material that is stained as well. Another factor in stain removal is the fact that stains can sometimes comprise two separate staining agents, which require separate forms of removal. A machine oil stain could also contain traces of metal, for example. Also of concern is the color of the material that is stained. Some stain removal agents will not only dissolve the stain, but will dissolve the dye that is used to color the material. Soaps and detergents are surfactants, which lower the surface tension of water. This allows them to quickly penetrate the cloth. Then mechanical action (the moving washer tub) lets the detergent emulsify the dirt or oil (surrounds it) so it can't go back into the clothes. Much of all this action depends on electrical charges in water and the detergent.  
**Hypothesis**  
I think that the spray, and then the wash will work better on stains. Because I think the two part process will be more effective  
**Materials**

* White T-shirts
* Ketchup
* Cranberry Juice
* Mustard
* Chocolate
* Tide Pen
* Shout stain spray

**Procedure**  
Stain a shirt with a variety of things then treat the shirt and see which one works better.  
**Independent Variable**  
Which one works better  
**Dependent Variable**  
What stain fighter is used  
**Controlled Variable**  
The types of stains and the material that is stained  
**Conclusion**  
The Spray worked better at fighting all the stains  
**Major Observations**  
The mustard was the hardest stain to remove  
**Possible Applications**  
I think the best thing to do is to use the pen if you have it and are away from home. However after that you should use the spray and wash the stain.  
**Time Spent**  
***September-***  
8th-45 min  
9th-45 min  
10th-45 min  
11th-45 min  
16-30 min  
***October-***  
1st-30 min  
14th-20 min  
26th- 30min  
***November-***  
4th-45 min  
6th-45 min  
***February-***  
3rd-1 hour  
8th-1 hour  
**Participants**  
Condiments  
**Acknowledgments**  
Mom  
Kinley